

Claims

- [c1] 1. A concealment apparatus comprising continuously addressable material as a means of adjusting its appearance.
- [c2] 2. A concealment apparatus that uses chemical reactions involving electrically charged micro particles.
- [c3] 3. A concealment apparatus or a composite material that comprises a channel to transport micro particles.
- [c4] 4. A display device that dynamically produces an image and where in spectral composition of said image comprises spectrum of a chemical compound location or amount of which in said image dynamically controlled.
- [c5] 5. A thermoelectric device that uses surface acoustic waves (SAW) motor to control propagation of heat.
- [c6] 6. A concealment apparatus comprising a unit equipped with active camouflage, wherein said camouflage adjusts its appearance according to conformation of the unit.
- [c7] 7. A concealment apparatus comprising an active camouflage, wherein said camouflage creates deceptive images with variable resolution, and said resolution has as

least two values one of which at least twice coarse than another.

- [c8] 8. A concealment apparatus comprising an active camouflage with at least one tube or channel that transports defined mobile phase from one physical location to another.
- [c9] 9. A concealment apparatus of claim 8 that controls temperature of at least one surface, wherein said surface is outer surface or inner surface that covers at least 1/10 of spatial angle around a unit that uses said apparatus.
- [c10] 10. A concealment apparatus comprising a unit equipped with active camouflage that uses photonic materials and dynamically composes infrared patterns or images.
- [c11] 11. A concealment apparatus comprising a unit equipped with active camouflage, wherein surface of said camouflage is elastic, and wherein term elastic stands for ability to elongate at least 10% in at least one dimension.
- [c12] 12. A concealment apparatus comprising continuous addressing as a means of gathering data about physical objects.
- [c13] 13. A concealment apparatus of claim 12, wherein said data correspond to infrared and thermal appearance of

background.

- [c14] 14. A concealment apparatus of claim 12, wherein said data correspond to topography of background.
- [c15] 15. A concealment apparatus comprising a unit equipped with active camouflage that uses means of sensing background appearance, wherein said means are short-range sensors.
- [c16] 16. A concealment apparatus comprising a unit equipped with active camouflage that uses mobility sensors and adjusts appearance based on data gathered from said sensors.
- [c17] 17. A heat sink device that converts received heat into energy of chemical bonds produced in endothermic chemical reaction.
- [c18] 18. A concealment apparatus that uses physical phase transition to convert heat into entropy.
- [c19] 19. A concealment apparatus comprising means of adjusting apparent geometrical shape, wherein said shape-shifting is driven by addressable active material.
- [c20] 20. A composite material that is capable of actively changing its shape, wherein said shape is dynamically selectable and controllable using continuous addressing.

- [c21] 21. A composite material of claim 20, wherein said composite comprises electro active polymer.
- [c22] 22. A composite material of claim 20, wherein said composite comprises electro active polymer, wherein said polymer is acrylic polymer.
- [c23] 23. A composite material of claim 20, wherein said composite comprises electro active polymer, wherein said polymer is silicone rubber.
- [c24] 24. A composite material comprising a waveguide that shaped as a helix. and said waveguide is laid out in pattern of parallel rows.
- [c25] 25. A composite material of claim 24, wherein said waveguide is laid out in pattern of parallel rows.
- [c26] 26. A composite material of claim 24, wherein there are multiple said waveguides laid out in pattern of parallel rows.
- [c27] 27. A composite material of claim 24, wherein said waveguide integrated in fabric-like material.
- [c28] 28. A composite material comprising an electro active polymer and continuous addressing, wherein said material provides topographical information about shape it

currently has.

- [c29] 29. A concealment apparatus comprising means to capture dust or dirt particles from ambient environment.
- [c30] 30. A concealment apparatus of claim 29 further comprising means of removal of said particles.
- [c31] 31. A concealment apparatus that uses "cold smoke".
- [c32] 32. A concealment apparatus that uses "Carbon Copy" algorithm.
- [c33] 33. A concealment apparatus that uses "Fractal" algorithm.
- [c34] 34. A concealment apparatus that uses "Pattern" algorithm.
- [c35] 35. A structure comprising an element with aspect ratio greater than 20 in at least one dimension, wherein said element has natural or artificially created pores or channels, and wherein said channels or pores connects at least two surfaces of said element. Wherein said surfaces are opened into at least two distinct non-overlapping volumes. And said element is employed to manipulate passage of mobile phase from one of said volumes into at least one other volume, and area or location of a region said mobile phase passes through belongs to at

least one of said surfaces, said region can be dynamically changed in controlled manner.

- [c36] 36. A structure of claim 35 that further utilizes electroosmotic effect to control flow of said mobile phase.
- [c37] 37. A structure of claim 35 that further employs continuous addressing to control said region.
- [c38] 38. A structure comprising a cylinder of polymer material and a waveguide that forms helix concentric with said cylinder and tangential with its surface, and said cylinder has height that at least ten times of its width.
- [c39] 39. A structure of claim 3 38 wherein said cylinder is hollow (tube).
- [c40] 40. A structure of claim 3 38 wherein said polymer is a component of electro active material.
- [c41] 41. A structure of claim 3 38 wherein said cylinder is hollow (tube), and said structure is capable of actively changing its shape, wherein said shape is dynamically selectable and controllable using said waveguide.